

Appln No. 09/324,741

Amdt date March 1, 2004

Reply to Office action of October 1, 2003

Listing of the Claims:

1. (Previously Presented) An identification system for identifying authentic documents bearing a magnetic stripe recorded with digital data and having a repeatable magnetic characteristic, comprising:

a magnetic stripe sensor configured to sense the magnetic stripe to provide an analog signal representative of the recorded digital data and the repeatable magnetic characteristic;

a digitizer configured to sample a portion of the analog signal to provide digitized samples indicative of the repeatable magnetic characteristic;

a waveform circuit configured to provide range data characteristics of at least the sampled portion of the analog signal;

a storage configured to store representations of the digitized samples and the range data as identification data to identify the document; and

a processor configured to determine whether the digital data recorded on the magnetic stripe has been copied from the authentic document using the digitized samples of the repeatable magnetic characteristic; and

wherein the processor is also configured to determine whether the repeatable magnetic characteristic has been copied from the authentic document using the range data

2. (Original) An identification system according to claim 1 wherein the magnetic stripe is recorded with a series of leading zeros and the digitizer samples the analog signal in a portion representing the series of leading zeros.

3. (Original) An identification system according to claim 1 wherein the magnetic stripe is recorded with digital data represented by magnetic transitions and the digitizer samples a portion of the analog signal representing spaces between said magnetic transitions to provide a digitized samples indicative of the repeatable magnetic characteristic.

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4. (Original) An identification system according to claim 1 wherein the documents comprise magnetic stripe cards and wherein the digital data recorded on the magnetic stripes includes data for fetching identification data from the storage.

5. (Previously Presented) An identification system for identifying authentic documents bearing a magnetic stripe recorded with digital data and having a repeatable magnetic characteristic that has unique range characteristics, comprising:

a magnetic stripe sensor configured to sense the magnetic stripe to provide an analog signal representative of the recorded digital data and the repeatable magnetic characteristic;

a magnetic characteristic circuit configured to provide magnetic characteristic representations indicative of the repeatable magnetic characteristic;

a waveform circuit configured to provide range representations indicative of the range characteristics of the analog signal generated from a portion of the magnetic stripe including the repeatable magnetic characteristic by the magnetic stripe sensor; and

a forming circuit to provide document identification representations based on the magnetic characteristic representations and the range representations to identify the documents.

6. (Previously Presented) An identification system according to claim 5 further including storage to store document identification representations and a comparison structure for comparing document identification representations from the storage with document identification representations from the forming circuit to verify a document.

7. (Original) An identification system according to claim 6 wherein the storage stores a plurality of document identification representations for comparison with a document identification representation from the forming circuit and wherein verification requires a degree of dissimilarity.

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8. (Original) An identification system according to claim 5 wherein the magnetic characteristic circuit provides magnetic characteristic representations from the analog signal at substantially flat sections to produce a predetermined number of digital samples.

9. (Original) An identification system according to claim 5 wherein the waveform circuits provides range representations indicative of amplitudes of the analog signal.

10. (Original) An identification system according to claim 5 wherein the waveform circuit provides range representations indicative of ratios of amplitudes of the analog signal at predetermined locations.

11. (Previously Presented) A system for use with a card bearing a magnetic stripe having a repeatable magnetic characteristic that has known range characteristics and recorded with digital data in the form of magnetic transitions, said system for providing a sensed characteristic identification for the card, comprising:

means for sensing said magnetic stripe to provide representations of digitally recorded data and representations of the repeatable magnetic characteristic in the form of digital sample signals;

means for selectively storing card identification words formed from the digital sample signals to manifest the repeatable magnetic characteristic of a card and known range characteristics of the repeatable magnetic characteristic.

12. (Previously Presented) A process for identifying authentic documents bearing a magnetic stripe having a distinct magnetic characteristic that is capable of repeated sensing to identify individual documents and that possesses known range characteristics, said process including the steps of:

sensing the magnetic stripe to produce a representative analog signal manifesting the distinct magnetic characteristic;

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providing magnetic characteristic representations indicative of the distinct magnetic characteristic;

providing range characteristic representations indicative of the range characteristics of the magnetic characteristic; and

providing identification representations based on the magnetic characteristic representations and the range characteristic representations to identify the documents.

13. (Previously Presented) A document, or the like, having its fingerprint recorded for the later verification of its identity,

the document having a magnetic medium,

the fingerprint comprising a remanent noise of at least a portion of the magnetic medium, and

a characteristic of an analog waveform sensed from the portion of the magnetic medium containing the remanent noise.

14. (Previously Presented) A document, or the like, according to claim 13 wherein the characteristic of an analog waveform is a ratio of waveform amplitudes at specific locations.

15. (Previously Presented) A document, or the like, according to claim 14 wherein the characteristic of an analog waveform is a ratio of peak amplitudes at spaced apart locations in the waveform.

16. (Previously Presented) A document, or the like, according to claim 13 comprising a plastic card bearing a magnetic recording stripe.

17. (Previously Presented) A document, or the like, according to claim 13 wherein the remanent noise and the characteristic of an analog waveform are recorded as the fingerprint for correlation with a subsequently sensed and formed fingerprint.

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18. (Previously Presented) A document, or the like, according to claim 13 wherein the document has recorded in the magnetic medium portion, data for locating a reference fingerprint for correlation with a fingerprint sensed from the document.

19. (Previously Presented) The identification system of claim 1, wherein the range data includes information concerning ratios of pulse amplitude to center line offset.

20. (Previously Presented) The identification system of claim 5, wherein the range representations includes information concerning ratios of pulse amplitude to center line offset.

21. (Previously Presented) The system of claim 11, wherein the amplitude characteristics of the digital sample signals include information concerning ratios of pulse amplitude to center line offset.

22. (Previously Presented) The process of claim 12, wherein the range characteristic representations include information concerning ratios of pulse amplitude to center line offset.

23. (Previously Presented) An identification system for identifying documents bearing a magnetic stripe recorded with digital data and having a repeatable magnetic characteristic, comprising:

a magnetic stripe sensor for sensing the magnetic stripe to provide an analog signal representative of the recorded digital data and the repeatable magnetic characteristic;

a magnetic characteristic circuit providing magnetic characteristic representations indicative of the repeatable magnetic characteristic;

a waveform circuit for providing range data characteristic of the analog signal;

a forming circuit to provide document identification representations based on the magnetic characteristic representations and the range representations to identify the documents;

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storage to store document identification representations and a comparison structure for comparing document identification representations from the storage with document identification representations from the forming circuit to verify a document; and

wherein the storage stores a plurality of document identification representations for comparison with a document identification representation from the forming circuit and wherein verification requires a degree of dissimilarity.